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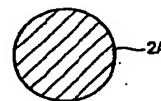
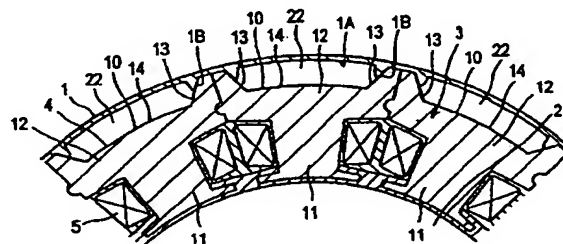
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### (54) Rotating electrical machine

(57) A rotating electrical machine is proposed which effectively cools a stator and prevents the generation of an eddy current in the stator. A cooling liquid passage (22) extends in a direction parallel with the rotating shaft (2A) of the rotor (2) between an outer peripheral face of the stator cores (4) and an inner peripheral face of the case (1) storing the stator cores (4). The cooling liquid is passed through the cooling liquid passage (22). In this manner, a highly effective cooling results from direct contact of the cooling liquid and the stator cores (4). Furthermore an eddy current is not generated in the stator core (4) as a result of using a cooling liquid having insulating properties.



**FIG.1**

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# EUROPEAN SEARCH REPORT

Application Number  
EP 01 12 3501

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	US 2 845 551 A (POTTER MARION G) 29 July 1958 (1958-07-29)	1,2	H02K1/14H02K1/20 H
Y	* figures 1,4 * * column 5, line 17 - line 21 *	3-6	H02K1/14
X	DE 41 03 154 A (UWE UNTERWASSER ELECTRIC GMBH) 6 August 1992 (1992-08-06) * claim 1; figure 2 * * column 2, line 61 - line 67.*	1,2	
Y	US 2 247 890 A (REARDON ROBERT T) 1 July 1941 (1941-07-01) * page 1, line 39 - line 43; figure 2 *	3,4	
Y	GB 387 961 A (PAUL EHLMANN) 16 February 1933 (1933-02-16) * figures 4,6 *	3,5	
Y	EP 0 823 771 A (MATSUSHITA ELECTRIC IND CO LTD) 11 February 1998 (1998-02-11) * column 5, line 17 - line 24; figure 4 *	6	
A	US 4 764 699 A (NOLD ROBERT D) 16 August 1988 (1988-08-16) * abstract; figure 1 *	2	
A	US 3 221 195 A (HOFFMANN JACK H) 30 November 1965 (1965-11-30) * column 2, line 19 - line 21; figures 1-6 *	3-5	
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>18 December 2003</b>	Examiner <b>Contreras Sampayo, J</b>
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 01 12 3501

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
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18-12-2003

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2845551	A	29-07-1958	NONE	
DE 4103154	A	06-08-1992	DE 4103154 A1	06-08-1992
US 2247890	A	01-07-1941	NONE	
GB 387961	A	16-02-1933	GB 389313 A BE 388508 A DE 664532 C DE 644532 C FR 717252 A GB 387622 A US 1959527 A	16-03-1933 30-06-1932 29-08-1938 07-05-1937 06-01-1932 09-02-1933 22-05-1934
EP 0823771	A	11-02-1998	EP 0823771 A1 US 6049153 A CN 1180457 A , B WO 9731422 A1 JP 3417409 B2 JP 2002238193 A JP 2002209353 A JP 2002199639 A JP 2002209368 A US 6300700 B1 US 6369480 B1 US 6356001 B1 US 2002036438 A1 US 2002070619 A1	11-02-1998 11-04-2000 29-04-1998 28-08-1997 16-06-2003 23-08-2002 26-07-2002 12-07-2002 26-07-2002 09-10-2001 09-04-2002 12-03-2002 28-03-2002 13-06-2002
US 4764699	A	16-08-1988	EP 0297119 A1 JP 1501674 T WO 8804857 A1 US 4825531 A	04-01-1989 08-06-1989 30-06-1988 02-05-1989
US 3221195	A	30-11-1965	GB 965038 A	29-07-1964

EPO FORM P0439

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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